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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,715	04/16/2004	Charles A. Miller	P213-US	2196

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EXAMINER

MOFFAT, JONATHAN

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 05/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/826,715	Applicant(s) MILLER, CHARLES A.	
	Examiner Jonathan Moffat	Art Unit 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6,8 and 10-13 is/are allowed.
- 6) ☒ Claim(s) 14-18 and 22-33 is/are rejected.
- 7) ☒ Claim(s) 7,9 and 19-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 7 and 9 are objected to because of the following informalities:

Claims 7 and 9 depend upon claims that now already include the limitation of a 'varying step comprises varying said calibration signal from an initial frequency that corresponds to a quarter wave or an integer multiple of a quarter wave with respect to an estimated length of one of said communications channels'. These claims are redundant and should be corrected to maintain a proper and formal record. Further explanation can be found in response to arguments.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 14-17, 22-25, 26-33 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Under new practices regarding 101, methods are required to produce a useful, tangible, and concrete result. Although the calculation of a propagation delay is indeed useful and concretely tied to a safe harbor of communications channel calibration, it DOES NOT constitute a concrete result. In order to be properly used or implemented, such a result must be further operated upon as it is not implicitly useful as mere data. It is require that the calculation result be stored, reported, displayed, otherwise presented to an operator, or further utilized by machinery or a device. As an example, claim 1 recites the limitation of 'calibrating said communications channels'.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1.

Claims 26-27, 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated Gerrish (US pat 6449568).

With respect to claim 26, Gerrish discloses a method comprising:

1) Determining a first frequency of a calibration signal driven onto a proximal end of a transmission line while said transmission line is terminated in a known impedance that causes a particular condition in a varying standing wave on said transmission line (column 3 lines 32-40).

2) Determining a second frequency of said calibration signal while said transmission line is terminated in an unknown impedance that causes said particular condition on said transmission line (column 3 lines 45-49).

3) Calculating a value of said unknown impedance (column 3 line 49 and column 2 lines 58-63).

With respect to claim 27, Gerrish discloses that the known impedance is one of an open or a short (column 3 lines 35-38).

With respect to claim 31, Gerrish discloses said calculating comprises calculating said value of said unknown impedance from said first frequency said second frequency, and said known impedance (column 3 lines 35-50).

Art Unit: 2863

With respect to claim 32, Gerrish discloses:

- 1) Driving said calibration signal onto said proximal end of said transmission line while said transmission line is terminated in said known impedance (column 3 lines 35-40).
- 2) Varying a frequency of said calibration signal (column 3 lines 43-45).
- 3) Determining a frequency of said calibration signal at which said particular condition in said standing wave on said transmission line occurs, wherein said determined frequency is said first frequency (column 3 lines 35-50).

With respect to claim 32, Gerrish discloses:

- 1) Driving said calibration signal onto said proximal end of said transmission line while said transmission line is terminated in said unknown impedance (column 2 lines 58-63 and column 3 lines 10-19).
- 2) Varying a frequency of said calibration signal (column 3 lines 43-45).
- 3) Determining a frequency of said calibration signal at which said particular condition in said standing wave on said transmission line occurs, wherein said determined frequency is said second frequency (column 3 lines 45-49).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto (US pat 5,811,655) in view of McGibney (US pat 6594273).

Hashimoto discloses an apparatus comprising:

1) Drivers for driving test data through said communications channels to terminals of an electronic device under test, and wherein each said communications channel terminates in a probe for contacting one of said terminals of said electronic device (Fig 1 items 60 and 69).

2) A signal generator configured to sweep a calibration signal from an initial frequency through a range of frequencies, wherein said calibration signal is input into said drivers and driven onto said communications channels (Fig 1 item 90).

3) A plurality of delay determination means (Fig 1 item 82).

4) A plurality of delay determination means (Fig 1 item 82).

With respect to claim 18, Hashimoto fails to disclose:

3) An envelope detector having an input connected to a drive end of said communications channel.

4) A wave-form detector connected to an output of said envelope detectors, said wave form detector configured to detect one of a null or a peak.

McGibney teaches, with respect to claim 18:

3) An envelope detectors having an input connected to a drive end of said communications channel (Fig 8 item 78).

4) A wave-form detector connected to an output of said envelope detector, said wave form detector configured to detect one of a null or a peak (Fig 8 item 98).

It would have been obvious to one of ordinary skill in the art to replace the delay determination circuit of Hashimoto with the envelope detector and wave-form detector of McGibney. Both components are used for delay calibration, though Hashimoto is not as specific as to the exact components that are to be used.

Response to Arguments

In response to applicant's arguments concerning the objection in the previous office action to claims 7-10, the examiner respectfully withdraws objections of claims 8 and 10 but maintains the stated objection of claims 7 and 9. The language of claims 8 and 10 is indeed more limiting than that of parent claim 1 because they exclude an initial frequency of a quarter wave and any integer multiples thereof that are not also integer multiples of a half wave. However, claims 7 and 9 remain redundant since they do not exclude any possible initial frequency of claim 1. A half wave IS an integer multiple of a quarter wave. All possible values covered by the limitation in claim 1 are also covered by the limitations in claims 7 and 9.

With respect to applicant's arguments concerning the previous rejection of claim 19 over prior art Hashimoto and McGibney. First, the examiner points out that the envelope detector of McGibney is for the purpose of generating a delay profile. Although this is not the same as a

Art Unit: 2863

propagation delay, this value is then used for further calculating such a value (column 8 line 48-column 9 line 11).

In response to applicant's argument against the combination of Hashimoto and McGibney, the examiner points out that the motivation to combine does not necessarily need to be foreseen by the references themselves (else the modification would be contained in one reference). There needs only to be a motivation to one of ordinary skill in the art and reasonable expectation of success.

Applicant then argues that reference Hashimoto fails to disclose sweeping a calibration signal through frequencies. The applicant points out that the timing generator of Hashimoto is a pulse signal. The examiner respectfully disagrees. Hashimoto does in fact sweep the calibration signal frequency by means of adjusting the delay element which affects the pulse signal (column 2 lines 15-38).

The applicant then argues that reference Gerrish does not disclose all of the claim limitations of claims 27 and 27. The applicant points out that Gerrish does not 'determine' a first and second frequency. The examiner respectfully disagrees with this statement since the term 'determine' is not limited to calculating but also encompasses any other means or process of arriving at that value including but not limited to calculating, guessing, being presented with, reading from a spec, setting manually, etc.

For these reasons, prior rejections of claims 18, 26, and 27 are maintained.

Conclusion

Claims 19-21, 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims AND to overcome the above stated rejections under 35 U.S.C. 101. Claims 14-17, 22-25 contain allowable subject matter as previously indicated and would be allowable if rewritten to overcome the above stated rejections under 35 U.S.C. 101.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Moffat whose telephone number is (571) 272-2255. The examiner can normally be reached on Mon-Fri, from 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

5/9/06

JM

BRYAN BUI
PRIMARY EXAMINER

